

**QoS SCHEDULER AND METHOD FOR IMPLEMENTING PEAK SERVICE
DISTANCE USING NEXT PEAK SERVICE TIME VIOLATED INDICATION**

Abstract of the Disclosure

5 A scheduler and scheduling method implement peak service distance
using a next peak service time violated (NPTV) indication. A flow scheduled
on a best effort or weighted fair queue (WFQ) is identified for servicing and a
frame is dispatching from the identified flow. A next PSD time (NPT) being
violated is checked for the flow. Responsive to identifying the next PSD time
(NPT) being violated for the identified flow, a NPTV indicator is set.
10 Alternatively, responsive to identifying the next PSD time (NPT) not being
violated for the identified flow, the NPTV indicator is reset. A next PSD time
(NPT) value is calculated for the flow. Checking for more frames to be
dispatched from the flow is performed. Responsive to identifying no more
frames to be dispatched from the flow, the NPTV indicator is utilized to
15 identify a calendar for attaching the flow upon a new frame arrival for the
flow. If the NPTV indicator is not set when the flow goes empty, upon a new
frame arrival for the flow, the flow is attached to a weighted fair queue
(WFQ) ring using a queue distance calculation. If the NPTV indicator is set
when the flow goes empty, upon a new frame arrival for the flow, then it is
20 determined if the next PSD time (NPT) value for the flow has been passed.
If the next PSD time (NPT) value has been passed, then the flow is attached
to the weighted fair queue (WFQ) ring using the queue distance calculation.
If the next PSD time (NPT) value has not been passed, then the flow is
attached to a peak bandwidth service (PBS) calendar using the next PSD
25 time (NPT) value.